

A high-level monthly briefing on operations and activities at the U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory – Home of Science and Engineering Solutions. Work at the lab advances the Department's strategic goals in the areas of energy, environment, defense and science.

■ ENERGY – Research Partnership Finds Fuel in Feedlots

The INEEL and Idaho-based Intrepid Technology and Resources, Inc. are teaming up to advance energy security and reduce demand for imported fuels. Intrepid is currently constructing a bio-digester to capture methane from cattle wastes found in Magic Valley feedlots. The methane that is generated will supply fuel to Intrepid's CNG (compressed natural gas) fueling station in Idaho Falls for alternate fuel vehicle use. The lab and its private-sector research partner have future plans to develop a process to liquefy the methane and prepare it to be easily transported using INEEL's patented liquefaction technology and Intrepid's bio-digester technology. That development will enable the economic use of dairy-produced methane as a transportation fuel, so it won't have to be wasted and released as a polluting greenhouse gas.

■ ENVIRONMENT – Idaho Team Samples Volcanic Air Emissions

INEEL scientists Mike Abbott and Ryan Hruska traveled to Mount St. Helens recently to gather air samples to measure naturally generated mercury levels coming from the active volcano. The information obtained by the INEEL can assist industry and regulatory officials in their efforts to determine whether further controls on mercury-emitting coal-fired power plants are needed. The closest sampling spot was at an altitude of 5,400 feet, seven miles from Mount St. Helens. The Electric Power Research Institute has expressed interest in the work, as has the National Center for Atmospheric Research.

■ DEFENSE – Robotic Aircraft Tested as Potential Firefighting Tool

National Aeronautics and Space Administration representatives are working with INEEL engineers to test unmanned aerial vehicles as part of a NASA-sponsored program to evaluate potential fire-fighting support from small robotic planes. Today's big fires are mapped using manned aircraft, fitted with thermal sensors, that fly at night over hot spots and fire perimeters. NASA and INEEL engineers are investigating whether it makes sense to use flocks of small, inexpensive UAVs carrying a variety of sensors for such routine surveillance. NASA, INEEL and Forest Service engineers are looking for technologies that are reliable, user-friendly, and either improve the speed and safety, or decrease the cost of firefighting.

■ SCIENCE – Inventors Hall of Fame Expands

Seven additional scientists and engineers, who each were responsible for at least five U.S. patents during their careers, were inducted into the INEEL Inventors Hall of Fame during the Ninth Annual Inventors' Recognition Banquet held earlier this month. "INEEL's inventors represent the finest in productivity and performance among America's researchers," said Laboratory Director Paul Kearns. "We continue to marvel at their creativity and insight, which is why we feel it so important to recognize their successes with a special recognition banquet," he added. Since the Hall of Fame's creation in 2002, the lab has recognized 30 inventors who have collectively amassed more than 190 inventions. This year's inductees include Ann Marie Phillips, Eric Larsen, Kevin Kostelnik, Mark Argyle, Robert Fox, Stuart Janikowski and retiree John Johnson.

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